

NCR-19-7711



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

646.3015

Job Sheet 200359



Part No: 646.3015

Job Qty: 12 pcs

Part Name: Blade



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 9/10/19

Job Tracking No:

Due Date: 10/15/19

Created By: Marie Lajeunesse

Type: Stock

Description:

Note: DWG REV N/C SHEET 12 IPP REV:A NEW ISSUE 12/11/09 JFS VERIFY BY: JLM

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
100	Bandsaw - 1	12 pcs		10/15/19	0.00	0.19	Bandsaw - 1		
110	HAAS 4 Axis - B4B	12 pcs		10/15/19	0.18	15.06	HAAS - 1 - B4B		
							HAAS - 2 - B4B		
							HAAS - 3 - B4B		
							HAAS - 4 - B4B		
120	QC 2	12 pcs		10/15/19	0.00	0.00	QC 2 - 1		
							QC 2 - 12		
							QC 2 - 14		
							QC 2 - 17		
							QC 2 - 19		
							QC 2 - 2		
							QC 2 - 20		
							QC 2 - 22		
							QC 2 - 23		
							QC 2 - 25		
							QC 2 - 32		
							QC 2 - 33		
							QC 2 - 35		
							QC 2 - 39		
							QC 2 - 4		
							QC 2 - 40		
							QC 2 - 44		
							QC 2 - 45		
							QC 2 - 48		
							QC 2 - 49		
							QC 2 - 50		
							QC 2 - 51		
							QC 2 - 52		
							QC 2 - 57		
							QC 2 - 62		



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Container No: S223707



Part: 646.3015

Job No: 200359

Serial No/Batch: S223707

Revision:

Inspector:

Exp Date:

Instructions: Various STC's

Date: 10/18/19

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					QC 2 - 63	
					QC 2 - 8	
					QC 2 - 66	
					QC 2 - 64	
					QC 2 - 65	
					QC 2 - 5	
					QC 2 - 71	
					QC 2 - 73	
					QC 2 - 69	
130	QC 8	12 pcs	10/15/19	0.00 0.00	QC 8 - 12	
					QC 8 - 14	
					QC 8 - 17	
					QC 8 - 20	
					QC 8 - 25	
					QC 8 - 3	
					QC 8 - 32	
					QC 8 - 33	
					QC 8 - 35	
					QC 8 - 39	
					QC 8 - 4	
					QC 8 - 44	
					QC 8 - 45	
					QC 8 - 49	
					QC 8 - 58	
					QC 8 - 8	19-10-23
					QC 8 - 9	
					QC 8 - 68	
					QC 8 - 67	
					QC 8 - 1 (A)	
					QC 8 - 47	
					QC 8 - 40	
					QC 8 - 52	
					QC 8 - 23	
					QC 8 - 57	
					QC 8 - 76	
140	Outsource - 1 - Heat Treat	12 pcs	10/15/19		MEI001-VC	15
150	Packaging 2-1 - Receive - B4B	12 pcs	10/15/19	0.00 0.00	Packaging 2 - 1 - B4B	2019-10-31
					Packaging 2 - 2 - B4B	
					Packaging 2 - 3 - B4B	
					Packaging 2 - 5 - B4B	
					Packaging 2 - 4 - B4B	
					Packaging 2 - 6 - B4B	
					Packaging 2 - 7 - B4B	
					Packaging 2 - 8 - B4B	
					Packaging 2 - 9 - B4B	
					Packaging 2 - 10 - B4B	
					Packaging 2 - 11 - B4B	
					Packaging 2 - 12 - B4B	
					Packaging 2 - 13 - B4B	NOV 11 2019
					Packaging 2 - 14 - B4B	
					Packaging 2 - 15 - B4B	
					Packaging 2 - 16 - B4B	

					Packaging 2 - 17 - B4B	
					Packaging 2 - 18 - B4B	
					Packaging 2 - 19 - B4B	
					Packaging 2 - 20 - B4B	
					Packaging 2 - 21 - B4B	
					Packaging 2 - 22 - B4B	
					Packaging 2 - 23 - B4B	
					Packaging 2 - 24 - B4B	
					Packaging 2 - 25 - B4B	
					Packaging 2 - 26 - B4B	
					Packaging 2 - 27 - B4B	
					Packaging 2 - 28 - B4B	
					Packaging 2 - 29 - B4B	
					Packaging 2 - 30 - B4B	
					Packaging 2 - 31 - B4B	
					Packaging 2 - 32 - B4B	
					Packaging 2 - 33 - B4B	
					Packaging 2 - 34 - B4B	
					Packaging 2 - 35 - B4B	
					Packaging 2 - 36 - B4B	
155	QC 6	12 pcs	10/15/19	0.00 0.00	QC 6 - 9	DAS
					QC 6 - 68	NOV 11 2019 68
					QC 6 - 61	9-89
					QC 6 - 40	
					QC 6 - 81	DAS
160	Spray Paint - 2 - B4B	12 pcs	10/15/19	0.00 0.39	Spray Paint - 1 - B4B	41 NOV 13 2019
					Spray Paint - 2 - B4B	3-89
					Spray Paint - 3 - B4B	
					Spray Paint - 4 - B4B	
162	QC 14	12 pcs	10/15/19	0.00 0.00	QC 14 - 15	
					QC 14 - 2	
					QC 14 - 34	
					QC 14 - 41	
					QC 14 - 51	
					QC 14 - 58	
					QC 14 - 59	
					QC 14 - 9	
					QC 14 - 68	DAS
					QC 14 - 40	NOV 14 2019 40
					QC 14 - 19	9-89
					QC 14 - 43	
					QC 14 - 24	
					QC 14 - 61	
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				QC 14 - 81	
180	Packaging 3-1 - Stock - B4B	12 pcs	10/15/19	0.00	Packaging 3 - 1 - B4B
				0.00	Packaging 3 - 2 - B4B
					Packaging 3 - 3 - B4B
					Packaging 3 - 4 - B4B
					Packaging 3 - 5 - B4B
					Packaging 3 - 6 - B4B
					Packaging 3 - 7 - B4B
					Packaging 3 - 8 - B4B
					Packaging 3 - 9 - B4B
					Packaging 3 - 10 - B4B
					Packaging 3 - 11 - B4B
					Packaging 3 - 12 - B4B
					Packaging 3 - 13 - B4B
					Packaging 3 - 14 - B4B
					Packaging 3 - 15 - B4B
					Packaging 3 - 16 - B4B
					Packaging 3 - 17 - B4B
					Packaging 3 - 18 - B4B
					Packaging 3 - 19 - B4B
					Packaging 3 - 20 - B4B
					Packaging 3 - 21 - B4B
					Packaging 3 - 22 - B4B
					Packaging 3 - 23 - B4B
					Packaging 3 - 24 - B4B
					Packaging 3 - 25 - B4B
					Packaging 3 - 26 - B4B
					Packaging 3 - 27 - B4B
					Packaging 3 - 28 - B4B
					Packaging 3 - 29 - B4B
					Packaging 3 - 30 - B4B
					Packaging 3 - 31 - B4B
					Packaging 3 - 32 - B4B
					Packaging 3 - 33 - B4B
					Packaging 3 - 34 - B4B
					Packaging 3 - 35 - B4B
					Packaging 3 - 36 - B4B

DAS
41 NOV 16 2019
5-89

190 QC 21 - SA

12
pcs

10/15/19 0.00 0.00

QC 21 - SA - 21

QC 21 - SA - 70

QC 21 - SA - 53

Part Op 100 - Cut Blank at 6.580"

Descriptions: 110 - 1-Machine per folio FB150

120 - (QC2- Inspect parts off machine FAI/FAIB)

130 - (QC8- Inspect parts - second check)

140 - FINISH: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS As per dwg 646.3000 PART ARE MADE FROM AISI A2 TOOL STEEL DETAIL OF C OF C REQUIRED

150 - (Receive & Inspect for Damage & Mat'l Certs)

155 - (QC6- All purchased or subcontracted products)

160 - (Spray Paint / NDT Room) PRIME AS PER DWG, SEE NOTE #4 5195271

162 - (QC14- Inspect Spray Paint)

180 - (Identify as per dwg & Stock Location: 6102) ***IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV***

190 - (QC21- Final Inspection - Work Order Release)

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
MSTEEL-A2-B0.500X1.250	AISI A2 Tool Steel Bar, 0.500 X 1.250	6.5400 ft (.545 ea)	100-Bandsaw - 1	5194 043 - 0125

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
100-Bandsaw - 1	MSTEEL-A2-B0.500X1.250	7	26	0

Part Specifications

Spec No	Description	Target/Tolerance	Limits	Type	Special Comments
1	Blade	0.375inches $\pm$ 0.005	0.380 0.370	.375"	
2	Blade	0.177inches $\pm$ 0.005 - 0.000	0.182 0.177	.1765"	Diameter
3	Blade	0.940inches $\pm$ 0.010	0.950 0.930	.935"	
4	Blade	0.524inches $\pm$ 0.005	0.529 0.519	.524"	
5	Blade	0.240inches $\pm$ 0.020	0.260 0.220	.240"	
6	Blade	0.125inches $\pm$ 0.005	0.130 0.120	.125"	Radius
7	Blade	45.000Degrees $\pm$ 0.500	45.500 44.500	44.9°	
8	Blade	0.524inches $\pm$ 0.005	0.529 0.519	.524"	
9	Blade	0.690inches $\pm$ 0.002	0.692 0.688	.690"	
10	Blade	1.250inches $\pm$ 0.002	1.252 1.248	1.250"	
11	Blade	4.684inches $\pm$ 0.005	4.689 4.679	4.685"	
12	Blade	6.450inches $\pm$ 0.010	6.460 6.440	6.445"	
13	Blade	0.325inches $\pm$ 0.005	0.330 0.320	.323"	
14	Blade	30.000Degrees $\pm$ 0.500	30.500 29.500	30°	

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Dart Aerospace Ltd.
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K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER

POHB044957



Supplier: MEI001-VC
Metcor Inc.
560 Boul. Arthur Sauve
Saint-Eustache
QC
J7R 5A8 Canada
Phone: 450 473 1884
Fax: 450 491 5498

Attention: Bejenaru, Livia

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

PO No: POHB044957

PO Date: 10/31/19

Due Date: 11/20/19

**Purchase Order
Revision:**

Revision Date:

Ship-To Contact: Guerin, Kimberley
Phone: 613-632-5200 Ext: 298
kguerin@dartaero.com

Via: Ground

Pymt Terms: Net 30

Freight Terms:

Special Comments:

E-MAILED
2019-11-05

Items

Line Item	Job	Part	Drawing	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	200359	646.3015	646.3000 Rev NC	Blade : Various STC's FINISH: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS As per dwg 646.3000 PART ARE MADE FROM AISI A2 TOOL STEEL DETAIL OF C OF C REQUIRED	Firmed	-	11/20/19	19 pcs	0 pcs	19 pcs	\$17.0526/pcs	\$324.00

X19

NOV 11 2019

DP
DAS
68
9-89



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K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER

POHB044957



Items

Line Item	Job	Part	Drawing	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
2	200453	D5518-1	D5518 Rev A	Crossbolt Spacer : Various STC's Issue PO : HEAT TREAT TO T4/T42 CONDITION MIN. UTS=30 KSI (60 HREW MIN) NOTE: DETAIL C OF C REQUIRED PART ARE MADE FROM 6061-T6 MATERIAL	Firmed	-	11/20/19	126 pcs	0 pcs	126 pcs	\$5.5396/pcs	\$697.99

Grand Total: \$1,021.99

Order Notes

Procurement Quality Clauses
A005 right of entry
A012 chemical and physical test report
A016 personnel qualification
A017 raw material identification (as applicable)

A022 Apical Processing
A024 process certifications
A026 certification of material conformance

A041 quality management system
A042 dart notification by supplier
A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Plex 11/5/19 8:20 AM Dart.Guerin.Kimberley

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ
ST-EUSTACHE, QC J7R 5A8
Tel: 450-473-1884 / Fax: 450-491-5498

Reçu de livraison

Delivery Receipt

BON DE TRAVAIL Order	EXPÉDITEUR Shipper ID	BON D'EXPÉDITION Shipper
340510	1	141359

EXPÉDITION COMPLÈTE / Shipped Complete

CLIENT /Customer 215

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053



LIVRÉ À / Shipped To

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053

COMMANDE DU CLIENT Customer PO	BON DE LIVRAISON DU CLIENT Customer Shipper No.	TYPE DE MATÉRIEL Material Type	DATE DE LA COMMANDE Order Date	TRANSPORTEUR Carrier
HB044957		A2	2019/11/1	client

QUANTITÉ Quantity	No. PIÈCE / Part No.	NOM DE LA PIÈCE / Part Name	DESCRIPTION DE LA PIÈCE Part Description	POIDS Weight
----------------------	-------------------------	--------------------------------	---	-----------------

19 646.3015
(19) 646.3015
JOB 200359

8,

1 BC EPS

TYPE DE CONTENEUR Container Type	# DE CONTENEURS # Of Containers	COMMENTAIRES CONTENEUR Container Comments
BC EPS	1	

CERTIFICAT

EXPÉDIÉ PAR: Shipped by:	
-----------------------------	--

QUANTITÉ EXPÉDIÉE / Quantity Shipped : 19

POIDS EXPÉDIÉ / Weight Shipped : 8,00

QUANTITÉ RESTANTE / Quantity Remaining : 0

POIDS RESTANT / Weight Remaining : 0,00

RECEIVED

NOV 11 2019

DART AEROSPACE LTD.

APPROUVÉ
[Signature]

CERTIFICAT

QUANTITÉ EXPÉDIÉE / Quantity Shipped: 19

POIDS EXPÉDIÉ / Weight Shipped : 8,00

Signature:

Date:

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8

Tél.: 450-473-1884

Télécopieur / Fax administration: 450-491-5498

Télécopieur / Fax production: 450 491-6454

Certificat de Conformité

Certificate of Compliance

BON DE TRAVAIL
order

340510

CHARGEMENT
load

1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

COMMANDE DU CLIENT customer po	CLASSIFICATION PIECE part classification	MATÉRIEL material	MAÎTRE D'OEUVRE prime contractor	PROGRAM
HB044957	N/A	A2		

SPÉCIFICATIONS DU PROCÉDÉ

processing specifications

VAC HARDEN

HARDEN AND TEMPER

EXIGENCE / requirement SPÉCIFICATIONS / specified TESTS EXÉCUTÉS / performed RÉSULTATS DE TESTS / results

HARDNESS

58 - 62 HRC

5

58 - 61 HRC

(907)

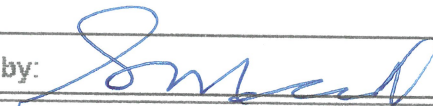
DAS
68
9-89

QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description
19	8	646.3015 (19) 646.3015 JOB 200359 1 BC EPS

14/11/19

COMMENTAIRES / comments

APPROUVÉ par / Approved by:



DATE: 2019-11-07

APPROUVÉ


METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8

Tél.: 450-473-1884

Télécopieur / Fax administration: 450-491-5498

Télécopieur / Fax production: 450 491-6454

Certificat de Conformité Détaillé

Detailed Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
340510	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

1

COMMANDE DU CLIENT customer po	CLASSIFICATION PIECE part classification	MATÉRIEL material	MAÎTRE D'OEUVRE prime contractor	PROGRAM
HB044957	N/A	A2		
SPÉCIFICATIONS DU PROCÉDÉ processing specifications				
VAC HARDEN				
HARDEN AND TEMPER				
EXIGENCE / requirement	SPÉCIFICATIONS / specified TESTS		EXÉCUTÉS / performed	RÉSULTATS DE TESTS / results
HARDNESS	58 - 62 HRC		5 (907)	59 - 61 HRC
QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description		
19	8	646.3015 (19) 646.3015 JOB 200359 1 BC EPS		

COMMENTAIRES / comments

VAC HARDEN 1800°F - 1:40 HRS
DOUBLE TEMPER 400°F - 2:00 HRS

Heat treatment (HT) was performed with equipment that meets the requirements of requested specification. All HT operations were performed in compliance with the required HT specification and all verifications have been performed and documented. No unauthorized changes were performed in regards to the HT. We certify that the material was manufactured, sampled, tested and inspected in accordance with the material specification and the purchase order and was found to meet the requirements.

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Le traitement thermique (TT) a été fait en utilisant des équipements en conformité avec la spécification demandée. Toutes les opérations de TT ont été faites en conformité avec les requis de la spécification demandée et toutes les vérifications et les tests demandés ont été faites et documentés. Aucun changement n'a été faite par rapport au TT. On certifie que le matériel a été fabriqué, échantillonné, testé et inspecté en accord avec les spécifications du matériel et le bon de commande et le matériel rencontre les exigences spécifiées.

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8

Tél.: 450-473-1884

Télécopieur / Fax administration: 450-491-5498

Télécopieur / Fax production: 450 491-6454

Certificat de Conformité Détaillé

Detailed Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
340510	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

1

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APPROUVÉ par / Approved by:

DATE: 2019-11-07

Lucie Desmarais
QA Technician



Entered:

Date:

28 Nov 18/19

WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No.

19-7711

Route update only

Job:

200 389

Part No.

046.3015

DISPOSITION

Rework ☐
Scrap ☒
Use-as-is ☐

DEPARTMENT/PROCESS

Skid-tube ☐
Machining ☒
Large Fab ☐

Cross tube ☐
Small Fab ☐
Finishing ☐

Eng. (Non-AW) ☐
Prod. Eng. Coord. ☐
Rec/Store/Packaging ☐

Engineering ☐
Water Jet ☐
Supplier ☐
Quality ☐

Date: 19-10-17

Sequence #: 110

QTY Affected: 1/20

1/20

MRB (QS1042)

DAS

55 OCT 3 2 2019
9-89

Description Work Order Deviation

Disposition

The 0.940" dimension is at .925"

Scrap and destroy / no replace

Completed By

Alfa 19-10-23

Lead hand / Supervisor

Be 19-10-23

QC / QA Coordinator

DAS

55 OCT 3 2 2019
9-89

Root Cause

Operator ☒
Manufacturing Process ☐
Equip/Tooling ☐
Handling/Preservation ☐
Material ☐
Product Improvement ☐
Process Improvement ☐
Human Factors ☐

FAULT CATEGORY

Pressure/Forced	Contamination	Power Loss/Surge	Positioned Wrong
Bending	Misaligned/off center	Folio/Program	Outside Tolerance
Crushing	BOM/Route	Grain Direction	Drawing
Cracks	Broken/Damage/Defect	Weld	Finish
Crimp/Kink/Ripple/Wave/Twist	Incomplete/Unclear Instructions	Wrong Stock Pulled	Part Lost/Missing
Marks/Chatter	Drill Holes	Out of Sequence	Misread
Mislabeled	Fit/Function	Off-set/Set-up	

Other/Details: